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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,553	07/30/2003	Hiroki Nakano	JP920020113US1	1552
32074	7590	12/15/2004	EXAMINER	
INTERNATIONAL BUSINESS MACHINES CORPORATION DEPT. 18G BLDG. 300-482 2070 ROUTE 52 HOPEWELL JUNCTION, NY 12533			CALEY, MICHAEL H	
			ART UNIT	PAPER NUMBER
			2871	
DATE MAILED: 12/15/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,553

Applicant(s)

NAKANO ET AL.

Examiner

Michael H. Caley

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

Figures 12-14 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 3, 4, 8, and 9 are objected to because of the following informalities:

A "moving direction" referenced in claim 3 line 2, claim 4 line 2, claim 8 line 3, claim 9 line 2 lacks antecedent basis.

A "other edge" referenced in claim 3 line 5 and claim 8 line 6 lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Chaudhari et al. (U.S. Patent No. 6,331,381 "Chaudhari").

Regarding claim 1, Chaudhari discloses an apparatus for forming an alignment layer on a substrate of a liquid crystal display having:

means for generating an ion beam or an atomic beam (Figure 7 elements 1 and 2);
masks (Figure 7 elements 3, 4, and "mask" as in Figure 4B) interposed between the substrate and the generating means, and respectively including an edge in a shape based on the orientation direction at each position of an alignment layer; and
a slit formed by a plurality of edges of the masks (Figure 7, slits through which substrate is exposed to ion source).

Regarding claim 2, Chaudhari discloses the shape of one of the edges as determined by integrating the orientation direction of liquid crystals in forming an alignment layer using a linear edge perpendicular to the moving direction of the substrate along the linear edge (Column 3 lines 59-67; Figures 2A, 2B, 5A, 7).

Regarding claim 3, Chaudhari discloses one of the edges as provided on the end side of the moving direction of the substrate (Figure 7 element 4) as including a shape based on the distribution of the orientation direction of liquid crystals and the other edge provided on the starting side of the movement direction of the substrate (Figure 7 element 3) as in a linear shape.

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Regarding claim 4, Chaudhari discloses the edges provided on the starting and end sides of the moving direction of the substrate as in the same shape (Figure 7 elements 3 and 4).

Regarding claim 5, Chaudari discloses the edges as respectively including a curve shape (Figure 7 elements 3 and 4; Column 5 lines 3-8).

Regarding claim 6, Chaudhari discloses a slit as formed by a plurality of edges of the masks (Figure 7).

Regarding claim 7, Chaudhari discloses the shape of one of the edges as determined by integrating the orientation direction of liquid crystals in forming an alignment layer using a linear edge perpendicular to the moving direction of the substrate along the linear edge (Column 3 lines 59-67; Figures 2A, 2B, 5A, 7).

Regarding claim 8, Chaudhari discloses the shape of the edge of the mask projected on a substrate provided on the end side of the moving direction of the substrate as including a shape based on the distribution of the orientation direction of liquid crystals (Column 3 lines 59-67; Figures 2A, 2B, 5A, 7), and the other edge provided on the starting side of the moving direction of the substrate as in a linear shape.

Regarding claim 9, Chaudhari discloses the edges provided on the starting and end sides of the moving direction of the substrate as in the same shape (Figure 7).

Regarding claim 10, Chaudhari discloses the edges respectively as having a different distance from the substrate at each position and one of the edges projected on the substrate as including a curve shape (Figure 7 elements 3 and 4; Column 5 lines 3-8; Figure 5A shows different distances).

Regarding claim 11, Chaudhari discloses forming an alignment layer by irradiating the ion beam at a thin film on a substrate via a slit formed by edges of masks and correcting the orientation direction of liquid crystals according to the alignment layer formed on the substrate using one of the edges (Column 3 lines 59-67, Column 4 lines 47-62).

Regarding claim 12, Chaudhari discloses the shape of one of the edges as determined by integrating the orientation direction of liquid crystals in forming an alignment layer using a linear edge perpendicular to the moving direction of the substrate along the linear edge (Column 3 lines 59-67; Figures 2A, 2B, 5A, 7).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

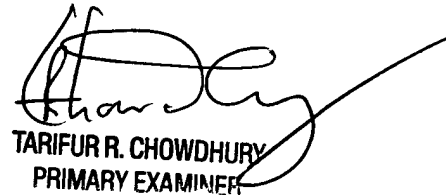
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael H. Caley
December 10, 2004


mhc


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER